The Dissolution of a Paradigm: A Comprehensive Refutation of the Hegemonic Evolutionary Psychology of Piaget and Kohlberg and Its Consequences for Educational Systems

Ernesto Mascarell Perez
Independent Researcher
mascarell1960@hotmail.com

Abstract

This article constitutes a total amendment to the dominant paradigm in educational psychology over the last century, represented by Jean Piaget's theory of cognitive development and Lawrence Kohlberg's theory of moral development. Through a critical review that integrates evidence from contemporary neuroscience, dynamic systems theory, cultural anthropology, primate ethology, feminist theories of development, cultural psychology, and institutional analysis of funding sources, it is demonstrated that this paradigm lacks scientific validity in its fundamental postulates. It is argued that the universal sequence of stages, the endogenous mechanism of equilibration, the primacy of individual development over social cognition, and the universality of justice-based moral development are not scientific facts but culturally situated constructs that have operated as ideological devices functional to a liberal, individualistic, and meritocratic conception of the human being. The negative consequences of this paradigm in Western educational systems are analysed, showing how it has legitimated early student tracking, the hierarchical ranking of academic over vocational knowledge, the invisibilisation of cultural and gender differences, and the justification of an assessment system that holds individuals responsible for structural inequalities. The article concludes with the need to rebuild educational psychology on radically different foundations.

Keywords: Piaget, Kohlberg, educational psychology, cognitive development, moral development, paradigmatic critique, constructivism, dynamic systems, social cognition, ethnocentrism, vocational training, educational assessment.

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1. Introduction: The Need for a Total Amendment

For over half a century, Jean Piaget's theories of cognitive development and Lawrence Kohlberg's theories of moral development have constituted the unquestioned theoretical foundation of educational psychology and, by extension, of teacher training and the design of educational systems throughout the Western world. Their influence has been so profound that concepts such as "constructivism", "discovery learning", "stages of development" or "readiness for learning" are part of the standard pedagogical vocabulary, often without awareness of their origin or their limitations.

However, in recent decades a considerable body of evidence has accumulated from diverse disciplines – neuroscience, endocrinology, epigenetics, ethology, cultural anthropology, feminist psychology, dynamic systems theory and critical institutional analysis – that not only questions specific aspects of these theories but demands their comprehensive refutation as valid frameworks for understanding human development and, consequently, for grounding educational practice.

This article maintains that the hegemonic developmental psychology of Piaget and Kohlberg does not represent a scientific description of the laws of human development, but rather a cultural and ideological construction that has operated as a powerful device for legitimising certain educational and cultural policies. Its influence has had profound and lasting negative consequences in Western educational systems, from age-based segregation and tracking to the hierarchisation of knowledge and the invisibilisation of cultural and gender differences.

The total amendment presented here is not a minor revision but the demonstration that the very project of genetic epistemology and stage-based moral development – the search for a universal and necessary sequence of stages culminating in a form of abstract, disembodied rationality – was a failed enterprise from its very foundations.

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2. The Dissolution of the Paradigm: Fundamental Critiques

2.1. Neurobiological Refutation: Plasticity, Dynamic Systems and Innate Social Cognition

Contemporary neuroscientific research has demolished the biological assumptions of the Piagetian model. Against the idea of endogenous development through fixed stages, the work of Marian Diamond demonstrated that the brain is plastic throughout life and that experience continuously sculpts its architecture, not in predetermined qualitative leaps. Her experiments with

enriched environments proved that learning modifies brain structure moment by moment, refuting the biological basis of a fixed and universal developmental sequence.

From dynamic systems theory, Esther Thelen demonstrated that cognitive development is not a linear sequence of stages but a complex, non-linear process that emerges in real time from the interaction between the body, the brain and the environment. Thelen experimentally refuted one of the pillars of Piaget's sensorimotor stage – the A-not-B error – showing that it was not a conceptual limitation (lack of object permanence) but a problem of working memory and inhibitory control linked to the maturation of the prefrontal cortex. This neuropsychological explanation, later corroborated by Diamond, dismantles the idea that development proceeds through discrete conceptual stages.

Furthermore, social cognition is not a late developmental achievement as Piaget maintained. Matthew Lieberman demonstrated that the brain possesses a "default network" for social cognition, making interpersonal connection a primary need rather than a by-product of general cognitive development. Marco Iacoboni, for his part, showed that understanding others is direct and pre-reflective, mediated by mirror neurons, evidencing that learning is inherently vicarious and embodied, not a solitary construction of the "epistemic subject".

2.2. The Mirage of Universality: Cultural Anthropology and Cross-Cultural Psychology

The claim to universality of Piagetian stages collapses before anthropological evidence. Margaret Mead demonstrated, through her work in Samoa and Manus, that adolescence is not a universal stage of "storm and stress" but a culturally shaped period. Her concept of "anthropological veto" – the search for a single negative case to refute a supposedly universal rule – found multiple counter-examples to Piaget's assertions.

Michael Cole and Barbara Rogoff deepened this critique from cultural psychology. Cole demonstrated that culture is not a variable that "influences" development but is constitutive of mental processes themselves. Rogoff, with her concept of "guided participation", showed that cognitive development does not occur inside the child's head but in active participation in the cultural practices of their community. Piaget's solitary "scientific child" is revealed as an ethnocentric fiction: a European, white, middle-class child whose development was elevated to the status of universal norm.

2.3. The Fragmentation of the Moral Domain: Kohlberg Refuted

The Kohlbergian edifice has been demolished from multiple fronts. Elliot Turiel demonstrated, with his domain theory, that even young children distinguish between moral, conventional and personal issues, refuting the idea of a unitary, stage-based moral development. Morality is not the progressive construction of a single principle of justice but a process of differentiation and coordination between distinct domains that follow trajectories that are not necessarily synchronous.

The most resonant critique was that of Carol Gilligan, who exposed the androcentric bias of Kohlberg's theory: by relying exclusively on male samples, he erected the "ethics of justice" (focused on abstract rights and rules) as the only path to moral maturity, while devaluing the "ethics of care" (focused on responsibility towards concrete others and the maintenance of relationships). Nel Noddings expanded this critique to the pedagogical sphere, arguing that moral education cannot be based solely on the discussion of hypothetical dilemmas but requires authentic caring relationships.

Jonathan Haidt delivered the definitive blow to the primacy of reason in morality. His metaphor of the elephant and the rider – where moral reasoning is a post-hoc justification of emotional intuitions – dismantles the rationalist core of the Kohlbergian model. Paul Bloom's research on the innate moral sense of infants reinforces this idea: morality is not a late intellectual construction but a deeply rooted biological adaptation.

2.4. The Critique from Ethology and Evolutionary Continuity

Frans de Waal has demonstrated that the essential components of morality – empathy and reciprocity – are not exclusive to humans but are shared with other primates. His "Russian doll" model shows that complex human morality rests on older evolutionary mechanisms of emotional contagion, consolation and a sense of justice. This dismantles Kohlberg's idea that morality is a late rational achievement and reinforces a view of continuous development, not by stages.

2.5. The Institutional and Ideological Scaffolding: Foundations, Power and Cultural Bias

The analysis of funding sources reveals that the Piagetian paradigm was not a scientifically neutral project. The Rockefeller Foundation significantly funded Piaget's work, especially through its support for the International Bureau of Education (IBE), which he directed from 1929 to 1967. The same foundation simultaneously funded the work of Edward Bernays, the father of public relations and modern propaganda.

This fact does not make Piaget a conscious instrument of corporate power, but it does reveal a convergence of interests. The Rockefeller Foundation found in Piaget's genetic psychology a theory that:

- Had the prestige of science.
- Was politically innocuous (it did not speak of class, exploitation or social transformation).
- Promoted a model of development centred on the individual adapting to their environment.
- Was perfectly compatible with the dominant liberal ideology.

The connection with Jeffrey Epstein and the Santa Fe Institute, documented in his donations and in his last interview, adds another layer of complexity to this web of funding and influence, although it does not imply direct control over the scientific agenda.

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3. Negative Consequences in Educational Systems

The influence of this paradigm on Western educational systems has had profoundly negative consequences, detailed below.

3.1. A Rigid and Biologically Outdated Structure

School organisation into sequential stages based on supposed Piagetian cognitive maturation has generated rigid structures that ignore the variability of real development. The Spanish case, with the transition from primary to secondary education fixed at age 12 by the LOGSE (1990) under the direct advice of César Coll, is paradigmatic. This design responds to the theoretical boundary between "concrete operations" and "formal operations" in Piaget, but it ignores the evidence on sexual maturation and the critical changes of puberty, which peak around age 14. The result is that students are forced to change schools, methodologies and social environments at the worst possible moment from the point of view of their biological and emotional development.

3.2. The Hierarchisation of Knowledge and Discrimination against Vocational Training

Piagetian theory, by placing abstract logical-formal thinking at the peak of intellectual development, provided powerful "scientific" support for a hierarchy of knowledge that devalues practical and applied knowledge. This hierarchy materialised in educational systems that separate students early into an

academic track (considered the norm) and a vocational track (considered second-class).

Vocational training has suffered persistent social devaluation, justified by the idea that students who do not reach abstract formal thinking require "more concrete" pathways. This segregation, far from being a pedagogical adaptation to students' needs, has operated as a mechanism for reproducing social inequalities, channelling students from disadvantaged backgrounds towards pathways with lower prestige and more limited professional expectations.

3.3. Gender Discrimination: A Structural Androcentric Bias

Piaget's work reflects an androcentric bias that has had consequences for women's education. The universal "epistemic subject" was, in reality, a male child observed in Western contexts. The International Bureau of Education, directed by Piaget himself, recommended in 1933 differentiated curricula for boys and girls based on their "future functions in life", using developmental psychology to give a scientific veneer to what was nothing more than a social convention.

Kohlberg's model, as Gilligan demonstrated, systematically undervalued women's moral reasoning by taking male justice ethics as the universal norm. This devaluation of the ethics of care has had profound implications for the conception of moral education, prioritising abstract debate on dilemmas over training in caring relationships and responsibility.

3.4. Ethnocentrism and the Denial of Cultural Diversity

By presenting their stages as universal, Piaget and Kohlberg rendered cultural differences in development invisible. This claim to universality translated into educational systems that imposed a Western model of development as a global standard, creating deep tensions in diverse cultural contexts. Curricular reforms inspired by Piaget, from Kenya to Latin America, often ignored the knowledge, values and learning styles proper to local cultures, operating as a form of educational colonialism.

3.5. An Assessment System that Holds the Individual Responsible

The Piagetian stage model has legitimised assessment systems that attribute educational success or failure to the individual capacities of the student, ignoring the determining role of the social, cultural and economic context. If development is a universal sequence, school failure can only be an individual deficit, not a symptom of structural inequalities. This approach has served to naturalise school failure among students from disadvantaged backgrounds,

turning problems of social justice into problems of individual cognitive development.

3.6. The Disconnect between Moral Judgment and Moral Action

The hegemony of the Kohlbergian model in moral education has led to emphasising the discussion of hypothetical dilemmas as the main educational strategy, under the assumption that sophisticated moral reasoning leads to ethical behaviour. Empirical evidence – from the work of R.S. Peters on virtues to that of Augusto Blasi on moral identity – demonstrates that no such automatic connection exists. The gap between judgment and moral action has been systematically ignored by curricula that prioritise abstract debate over character formation, virtuous habits and the real practice of care.

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4. Total Amendment: Towards a Reconstruction of Educational Psychology

The total amendment presented here does not consist of reforming the existing paradigm but of recognising its dissolution and building on radically different foundations. The main lines of this reconstruction include:

4.1. From the Solitary Epistemic Subject to the Social and Embodied Being

Educational psychology must start from the recognition that the human being is a social being from birth. Cognition is not an individual enterprise but an embodied and distributed process that emerges in interaction with others and with the cultural environment. This implies rethinking educational methodologies, shifting the focus from individual discovery learning to collaborative learning, guided participation and the creation of communities of practice.

4.2. From Universal Stages to Diverse Trajectories

Human development does not follow a universal sequence of stages but diverse trajectories shaped by the interaction between biology, culture and personal experience. The educational system must abandon the rigidity of age-based groupings founded on supposed cognitive stages and move towards flexible structures that respect the biological and emotional rhythms of students.

4.3. From Hierarchisation to the Integration of Knowledge

The devaluation of practical and professional knowledge must be reversed through curricula that integrate theoretical and applied training in hybrid pathways. Vocational training should not be a second-class track but a full-right

pathway, with flexible bridges to higher education that allow combining technical specialisation with general education.

4.4. From Abstract Morality to Lived Ethics

Moral education must shift from the discussion of hypothetical dilemmas to the practice of care, character formation and the integration of morality into personal identity. This implies creating educational environments where empathy, justice and responsibility are lived daily, recognising that ethical behaviour is not learned by debating it but by practising it in authentic caring relationships.

4.5. From Classificatory Assessment to Formative and Contextual Assessment

The assessment system must abandon the logic of classifying students according to their supposed level of cognitive development and focus on understanding their learning processes in context. This implies recognising that "error" is not an individual deficit but a manifestation of the interaction between the student and their learning environment, and that the function of assessment is not to certify failures but to guide improvements.

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5. Conclusion

The hegemonic developmental psychology of Piaget and Kohlberg has been a scientifically refuted yet institutionally persistent paradigm. Its long hegemony is not explained by its scientific validity but by its ideological functionality: it provided an apparently neutral scaffolding to justify educational systems that reproduce social inequalities, devalue practical knowledge, render cultural and gender differences invisible, and hold individuals responsible for problems that are structural.

The pending task is not small: it involves rebuilding educational psychology on the basis of what contemporary science actually knows about human development – that it is plastic, social, diverse and deeply context-dependent. This reconstruction is not only a scientific imperative but an ethical and political one: a truly emancipatory education cannot be built on a science that denies the social nature of the human being.

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